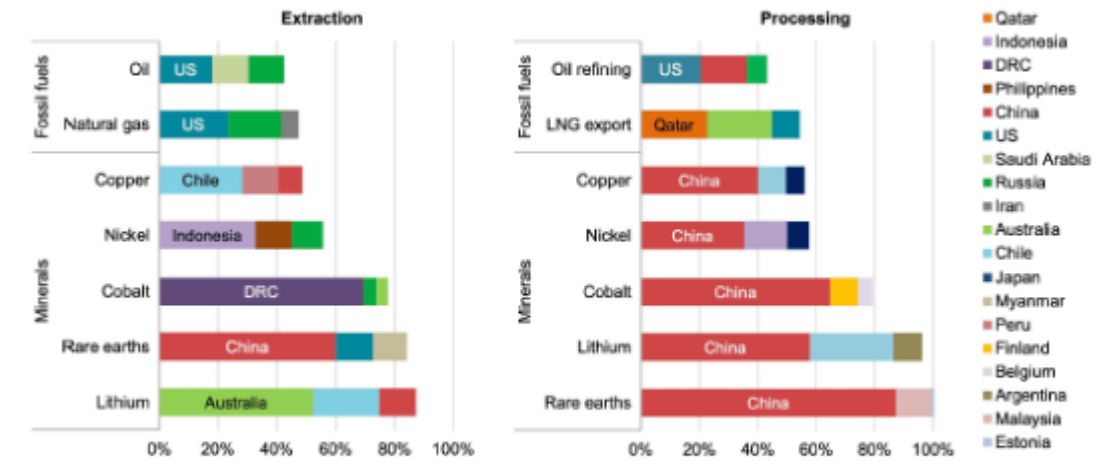






????????????OPEC?????PV????EV????????????????????????????????

Figure 18. Share of Top Three Producing Countries in Production of Selected Minerals and Fossil Fuels, 2019



Notes: LNG = liquefied natural gas; US = United States. The values for copper processing are for refining operations. Sources: IEA (2020a); USGS (2021), World Bureau of Metal Statistics (2020); Adamas Intelligence (2020).

IEA. All rights reserved.

Source: IEA, The Role of Critical Minerals in Clean Energy Transitions (2021)

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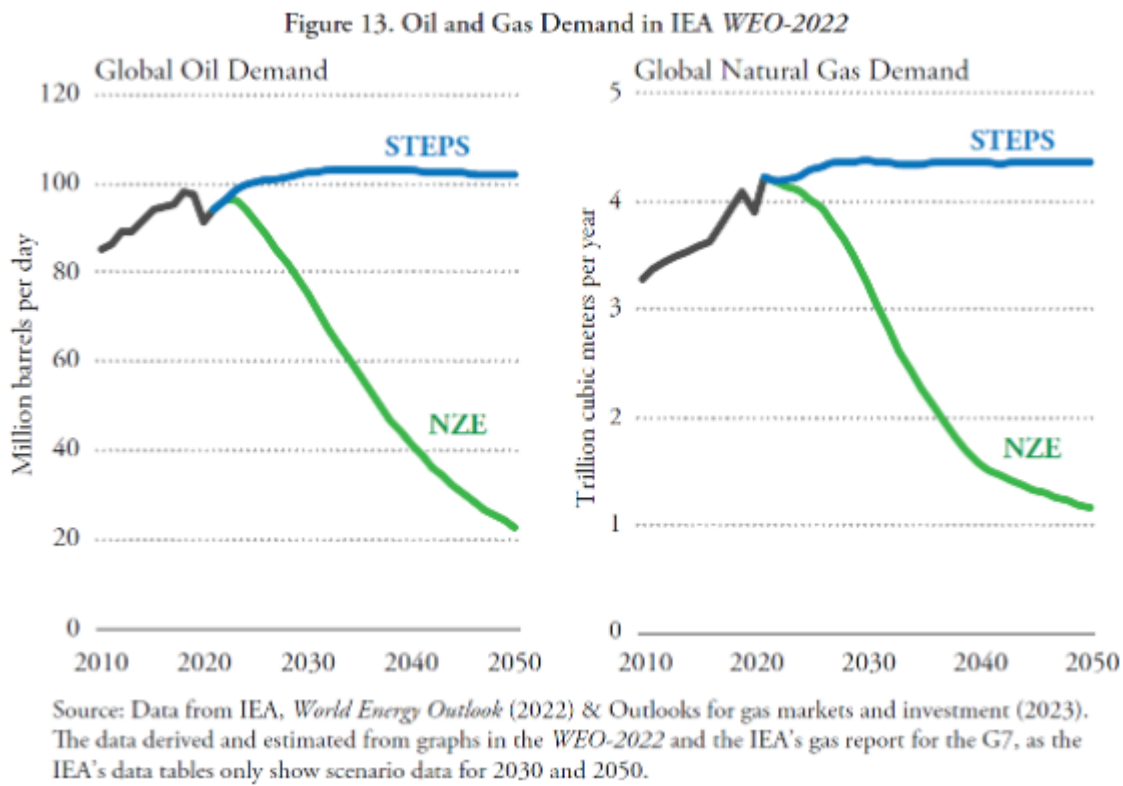
privetik/iStock

????????IEA????????????Net Zero Scenario, NZE????????????????????

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### A Critical Assessment of the IEA’s Net Zero Scenario, ESG, and the Cessation of Investment in New Oil and Gas Fields.

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Rawf8/iStock

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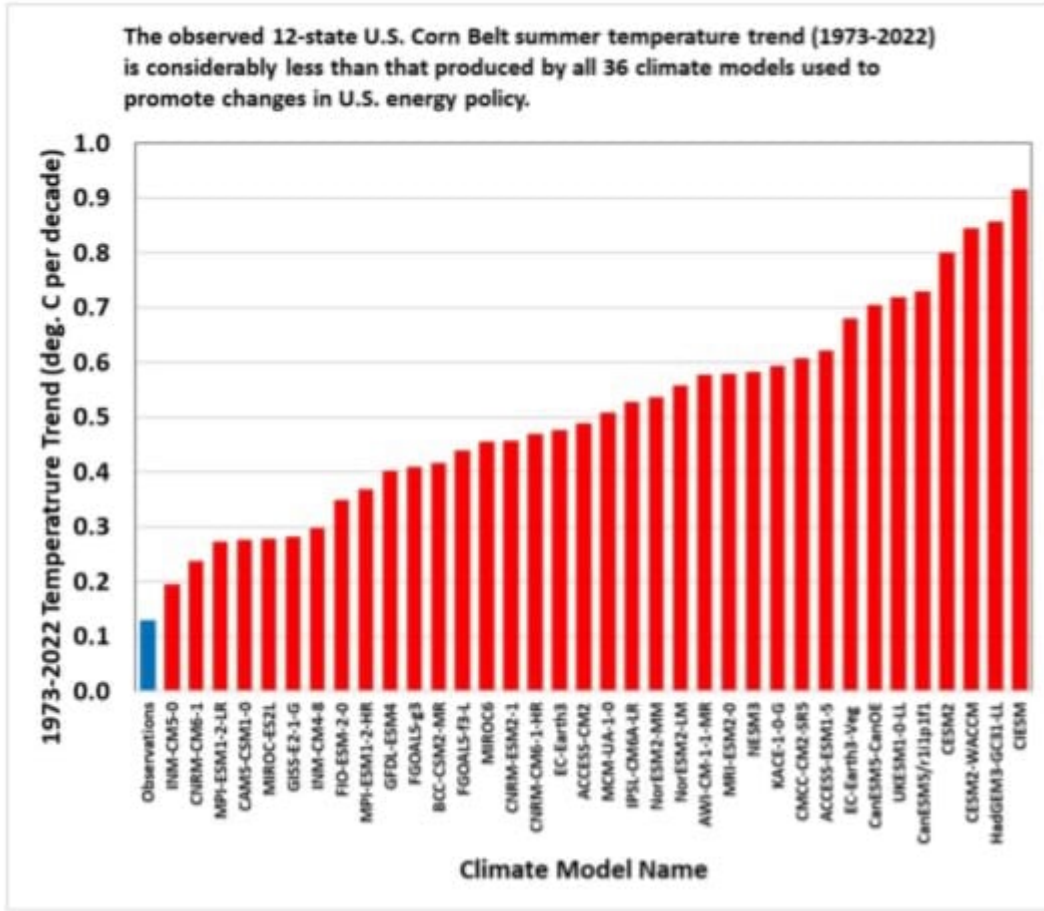
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feellife/iStock

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BBC???? - ?????20????????????????????????????????https://t.co/pF1RfWUM94

— BBC News Japan (@bbcnewsjapan) February 18, 2021

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### 【参考】今後10年間の火力供給力の増減見通し

- 今後も、主に緊急時に活用されていた**石油火力発電設備の廃止が継続**する見込み。
- 当面は火力の新設計画も予定されている一方、**供給力全体としては減少傾向**にあり、稼働率低下や卸電力取引市場の価格の低迷に伴う採算性悪化から、さらに加速する懸念。



注 1. 2017～2021年度：新設実績は真源エネルギー「石炭火力発電所一覧」および電気事業便覧（2021年版）、廃止実績は各年度供給計画および各社HP等より。  
注 2. 2022年度以降（新設）：2022年度供給計画より

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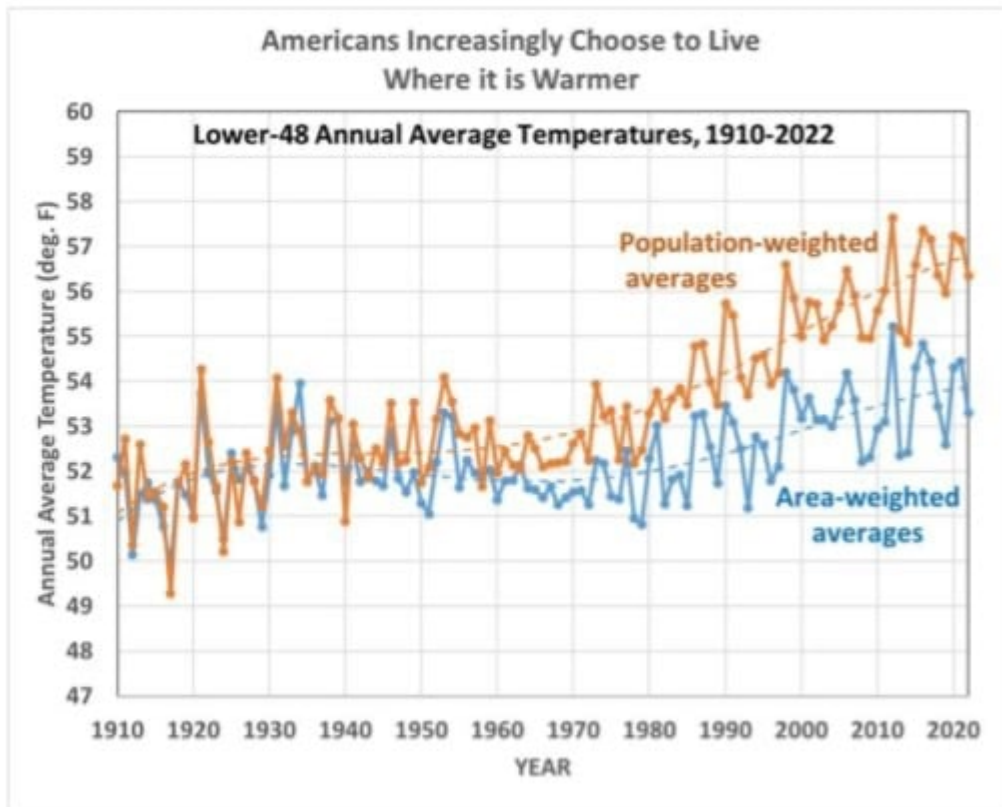




Darwel/iStock

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?? ?? · Sunday, May 28th, 2023



sasun bughdaryan/iStock

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### **GX????????????**

?? ?? · Saturday, May 27th, 2023



PhonlamaiPhoto/iStock

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???Twitter by True Science PEng, DFP, ADFS, MA, MBA

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?? ??? · Monday, May 22nd, 2023



Wikipedia??

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Allkindza/iStock

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**FACT SHEET: Biden-Harris Administration Proposes New Standards to Protect Public Health that Will Save Consumers Money, and Increase Energy Security**

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- ????CO<sub>2</sub>????2????100????CO<sub>2</sub>????????????????????????????????
- EV1????????????12,000????????????????????200????????????????????????????
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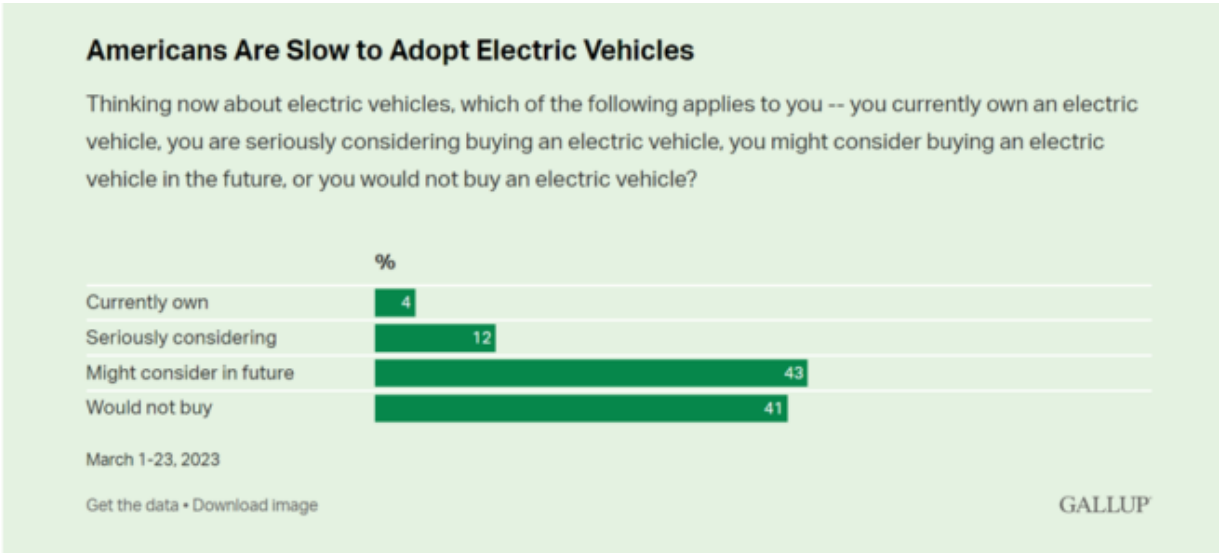
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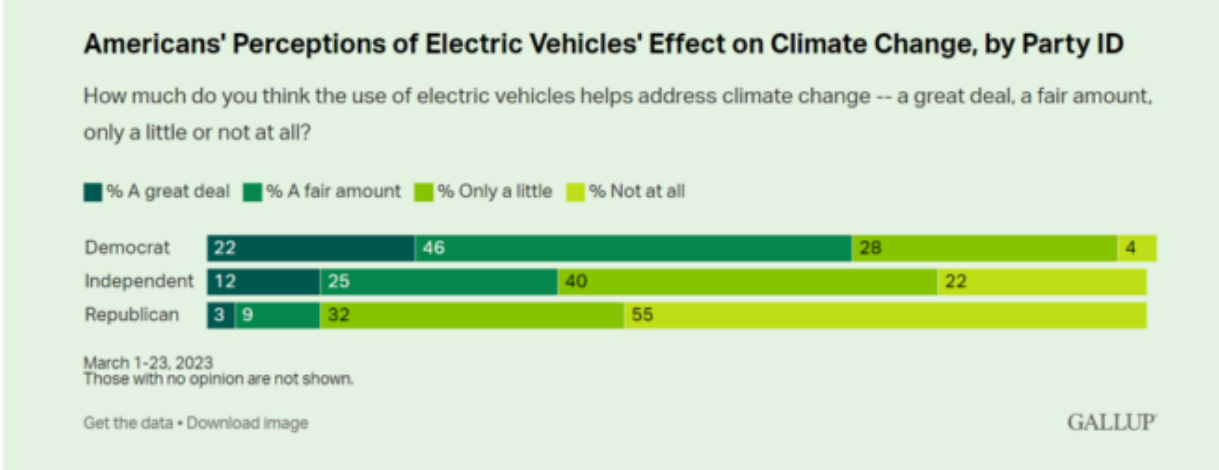
**Most Americans Are Not Completely Sold on Electric Vehicles**

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- ?????????????????EV????????????5????????16????????58????????????????????
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## IPCC?????63????????????????????????????????

?? ?? · Tuesday, May 16th, 2023



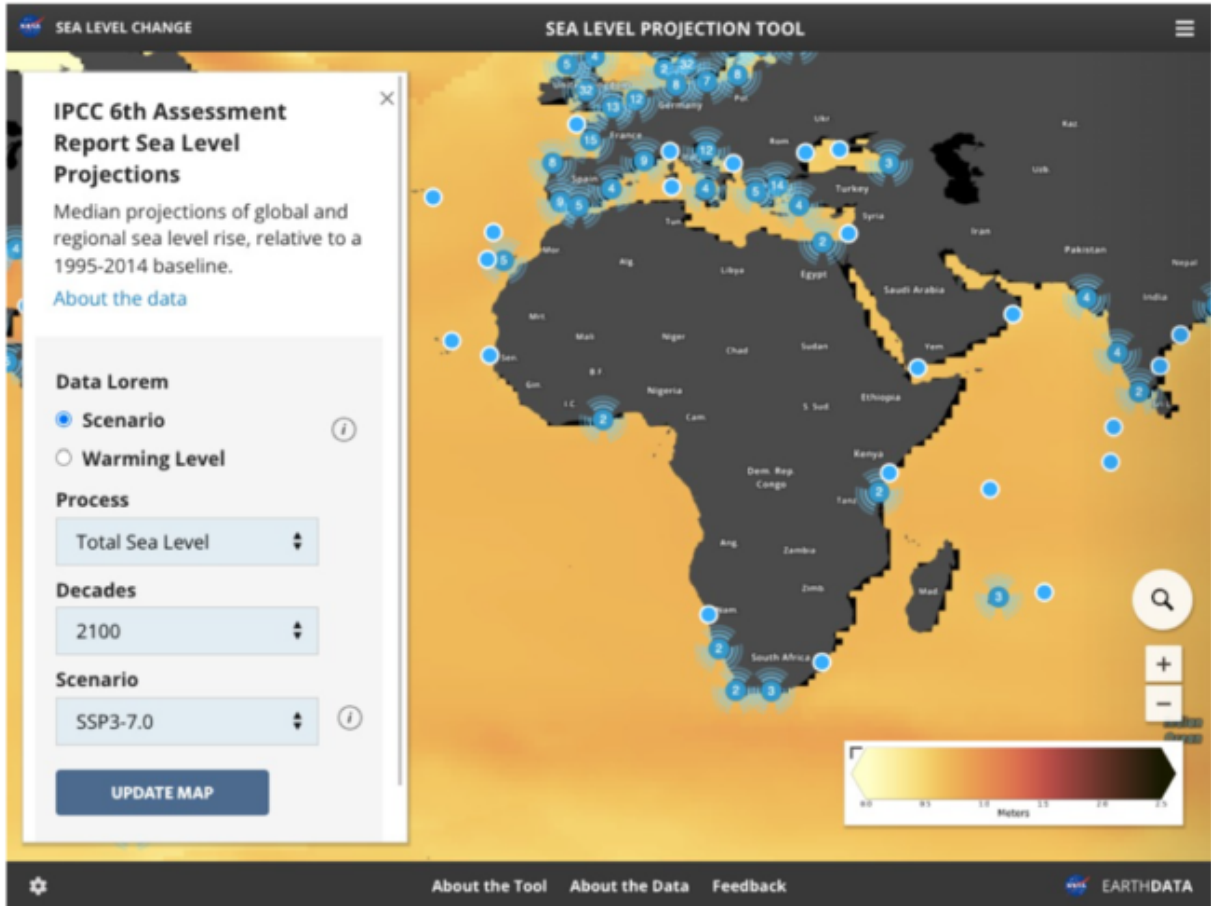
remotefx/iStock

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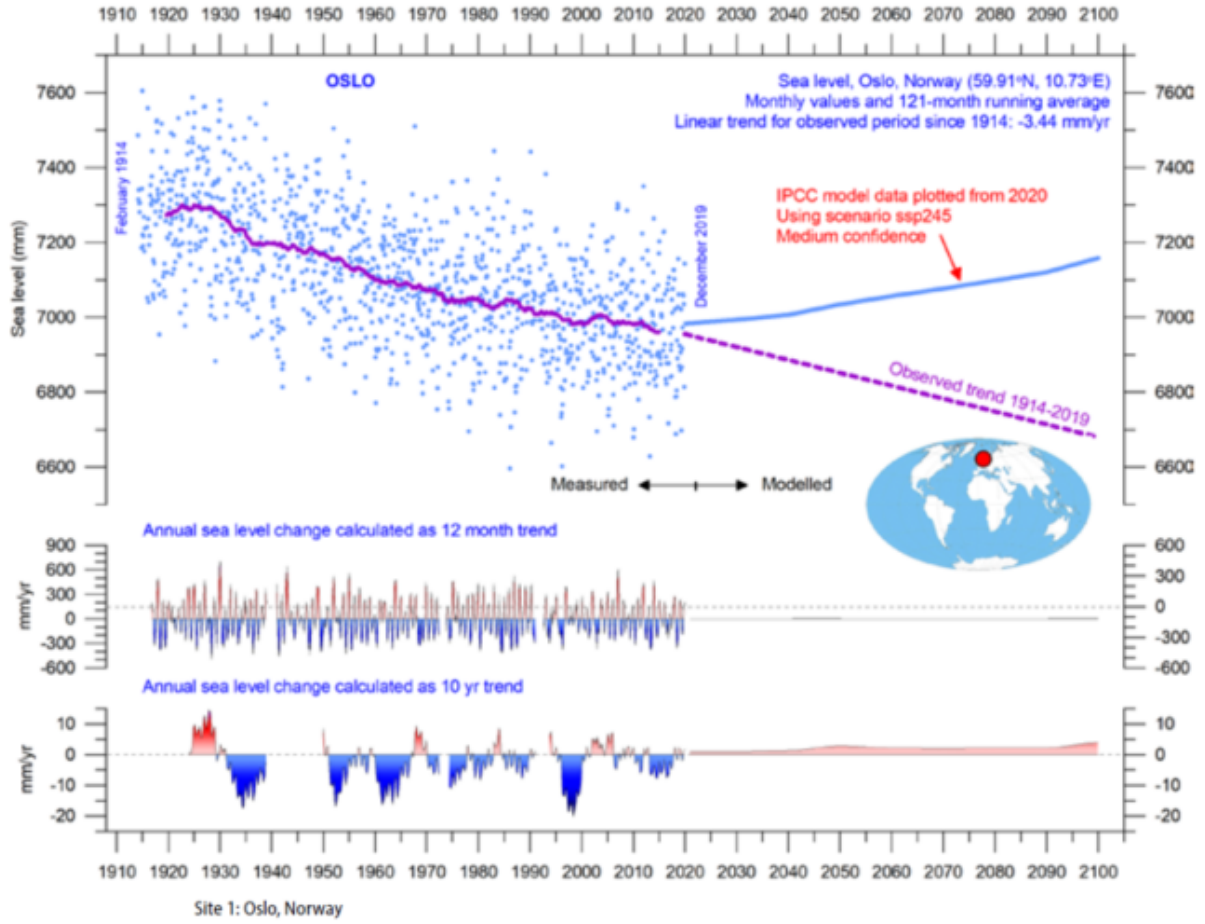
### IPCC AR6 Sea Level Projection Tool



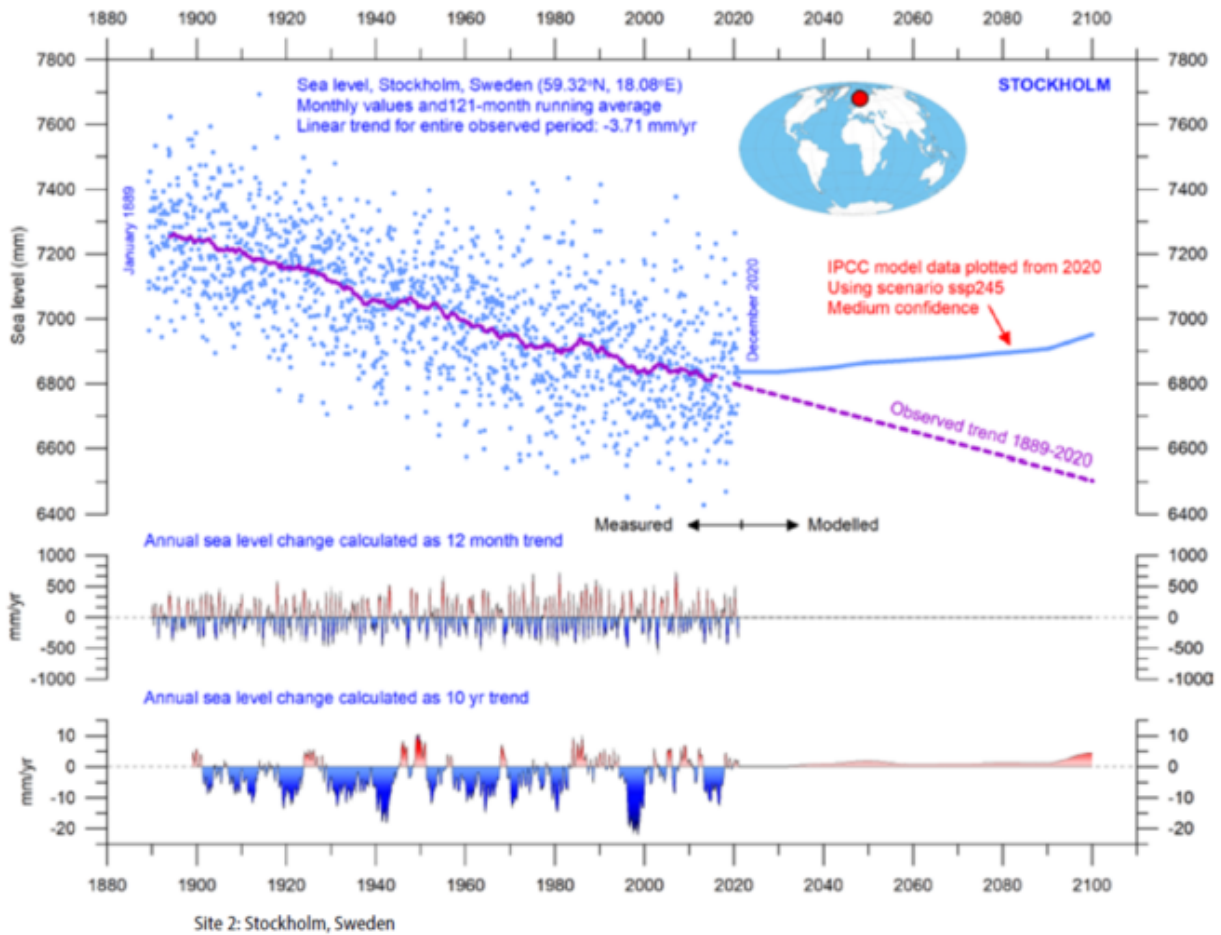
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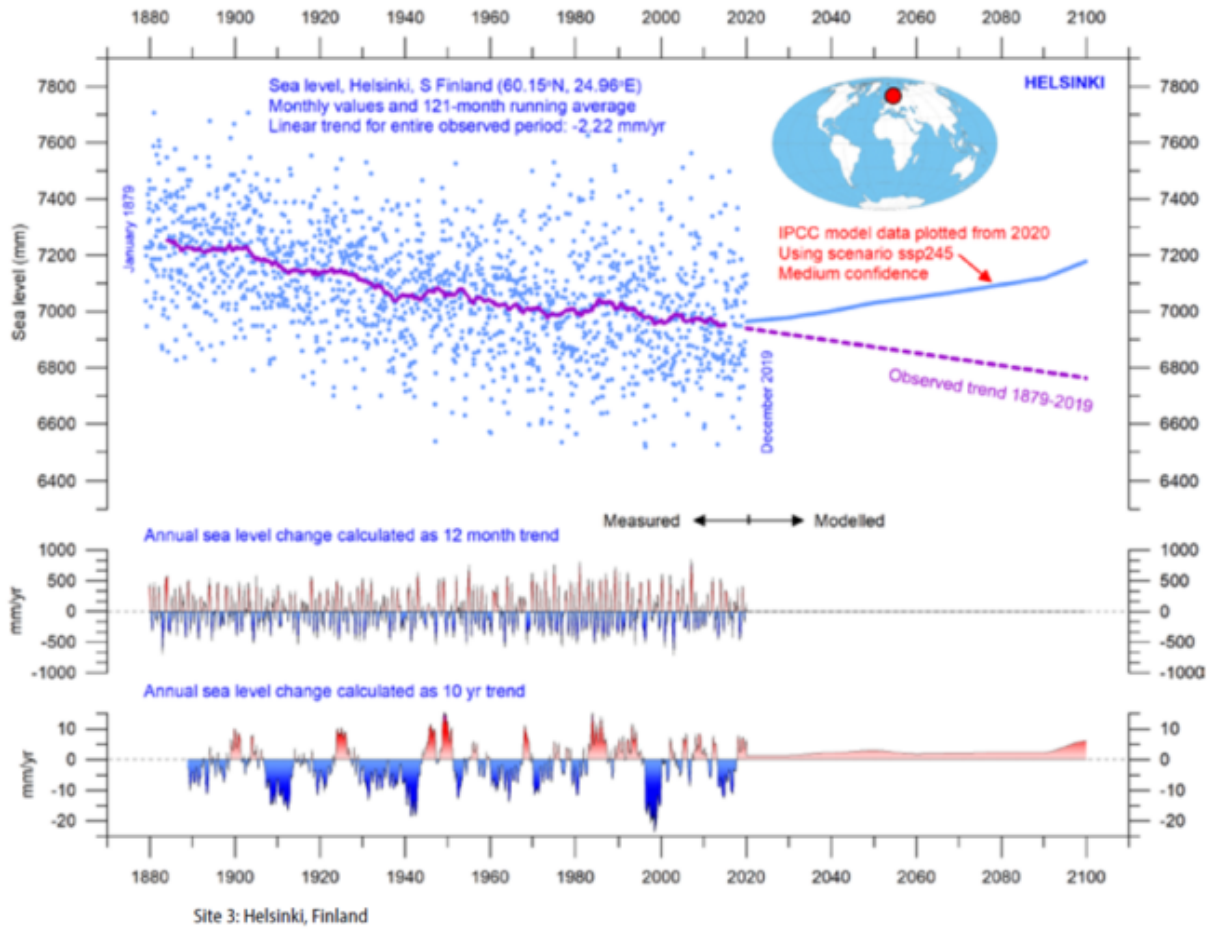
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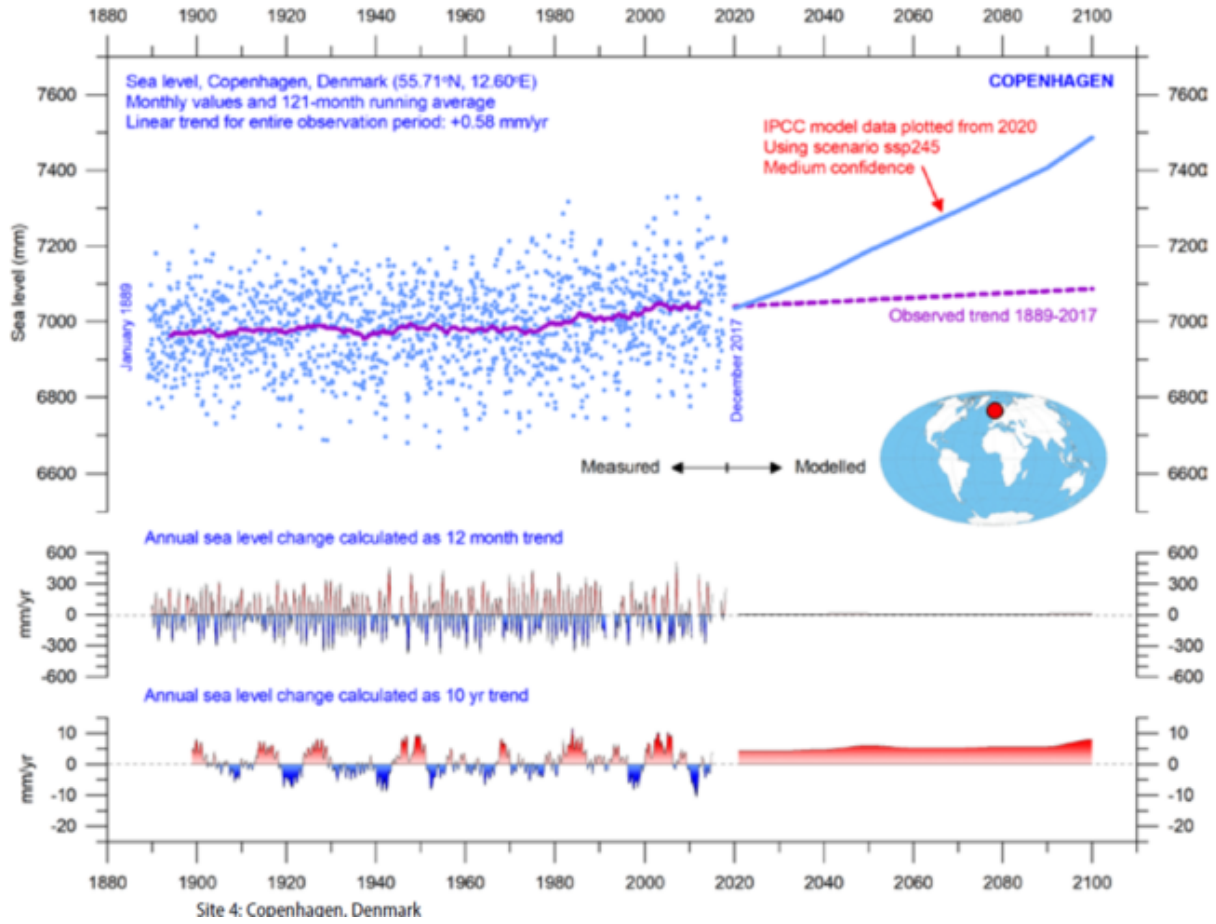
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**IPCC?????62????????????**

?? ?? · Monday, May 15th, 2023

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[Wikipedia??](#)

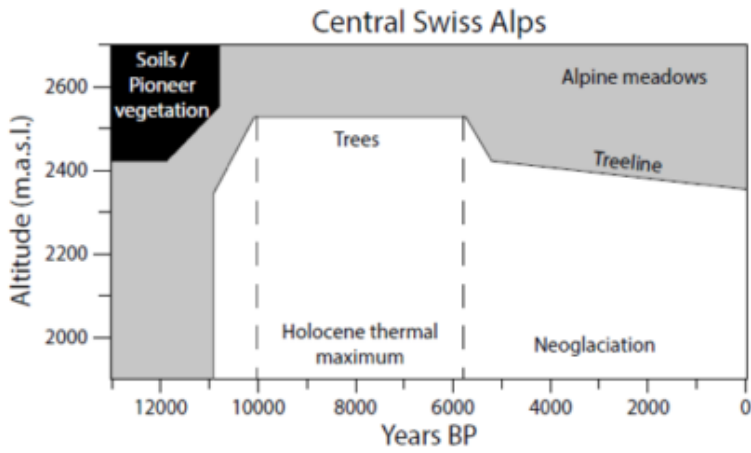
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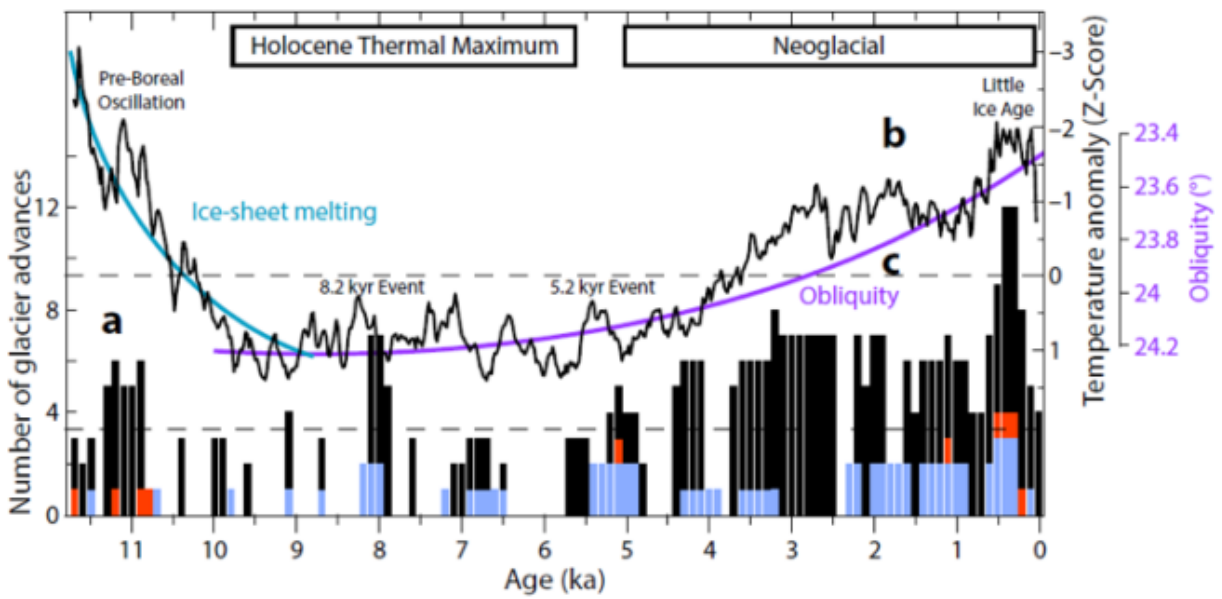
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**Figure 4:** Fluctuations of the treeline in the Swiss Central Alps during the Holocene. The limits of the vegetational zones are placed between the sites according to the presence of the respective vegetation type as inferred by macrofossil analysis. Altitude in meters above sea-level. After Tinner & Theurillat 2003. Current treeline in the Swiss Central Alps is 150-200 m below Holocene Thermal Maximum treeline limit.

??Obliquity??  
 ???1850????????????????????Ice  
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**Figure 3:** Glacial advances versus temperature (inverted) during the Holocene. a) Number of regions displaying glacier advances at each Holocene century. Black, NH 17 regions; orange, low latitudes single region; ice blue, SH 4 regions. Bottom dashed line, Holocene glacial position average. b) Inverted temperature reconstruction from the same 73 proxies used by Marcott et al. 2013. The reconstruction ends in 1910 and does not include modern warming. Temperature anomaly changes are expressed as Z-score (distance to the mean). Some well-known cooling periods or events are indicated by their accepted names. The period affected by the melting of the extra-Arctic ice sheets is indicated in aquamarine. c) Inverted changes in obliquity. Vinós, 2022, page 55.<sup>13</sup>

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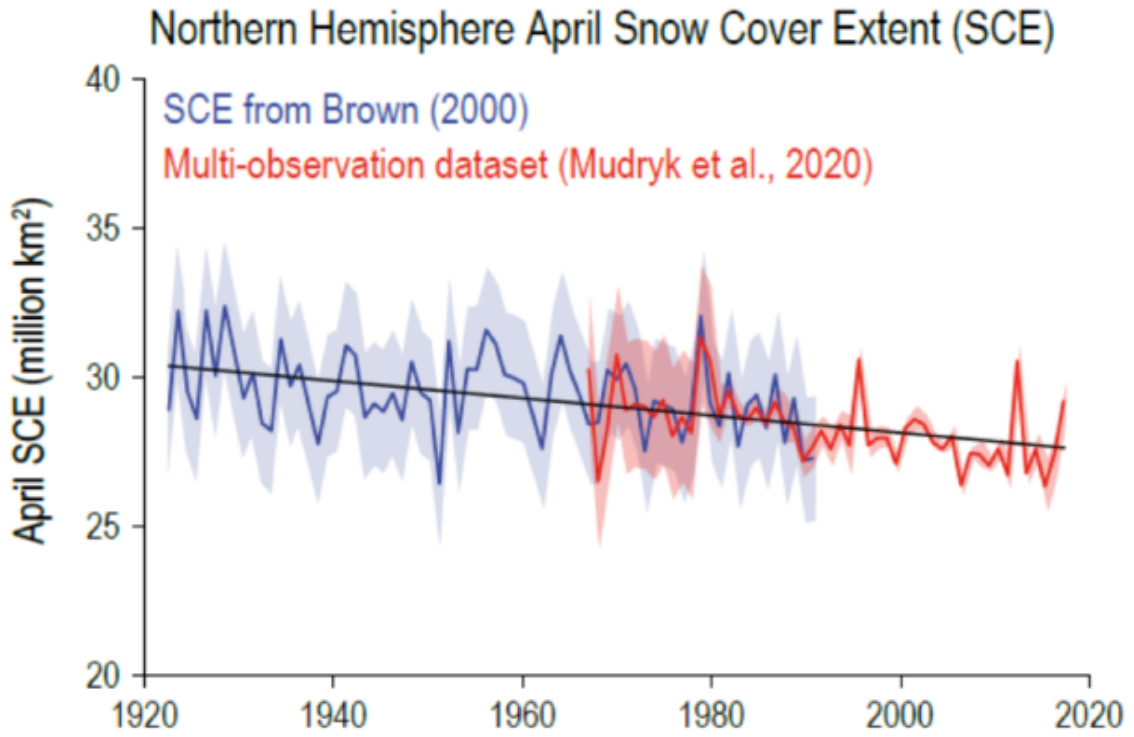


borchee/iStock

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**Figure 2:** April snow cover extent (SCE) for the Northern Hemisphere. From: AR6, chapter 2.

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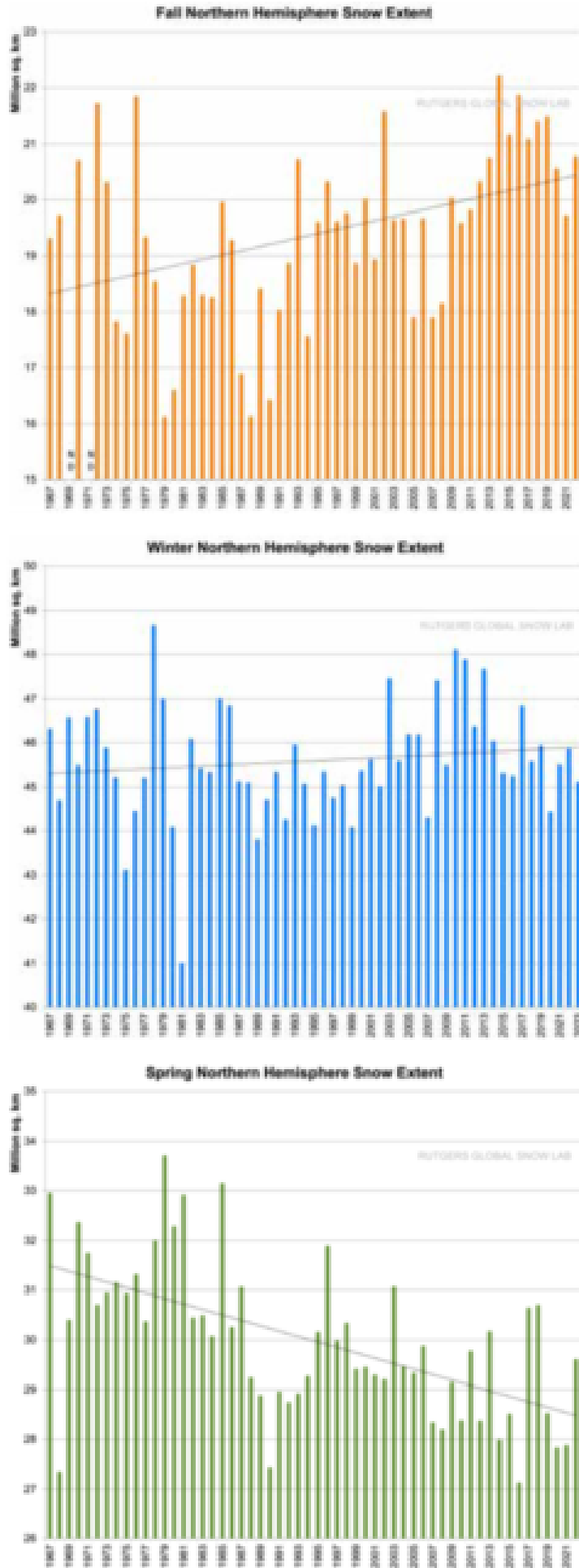


Figure 4: Snow cover extent (SCE) for the Northern Hemisphere for autumn, winter and spring. From: Rutgers Global Snow Lab (2023)



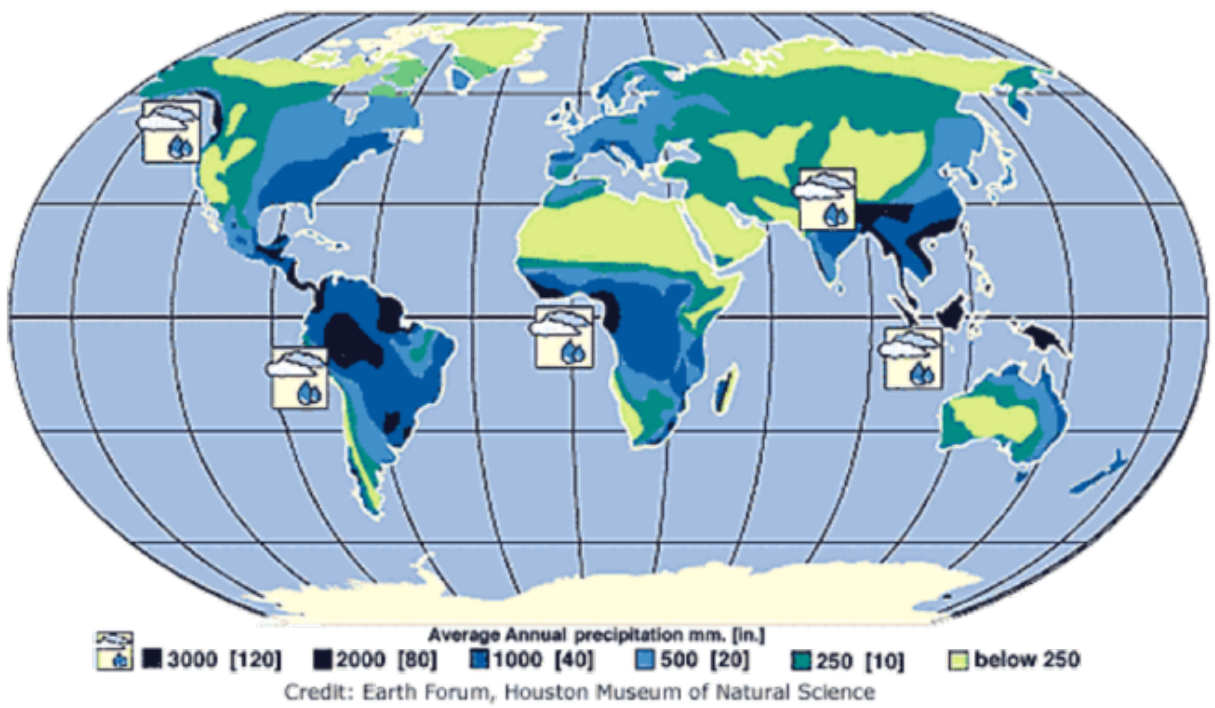
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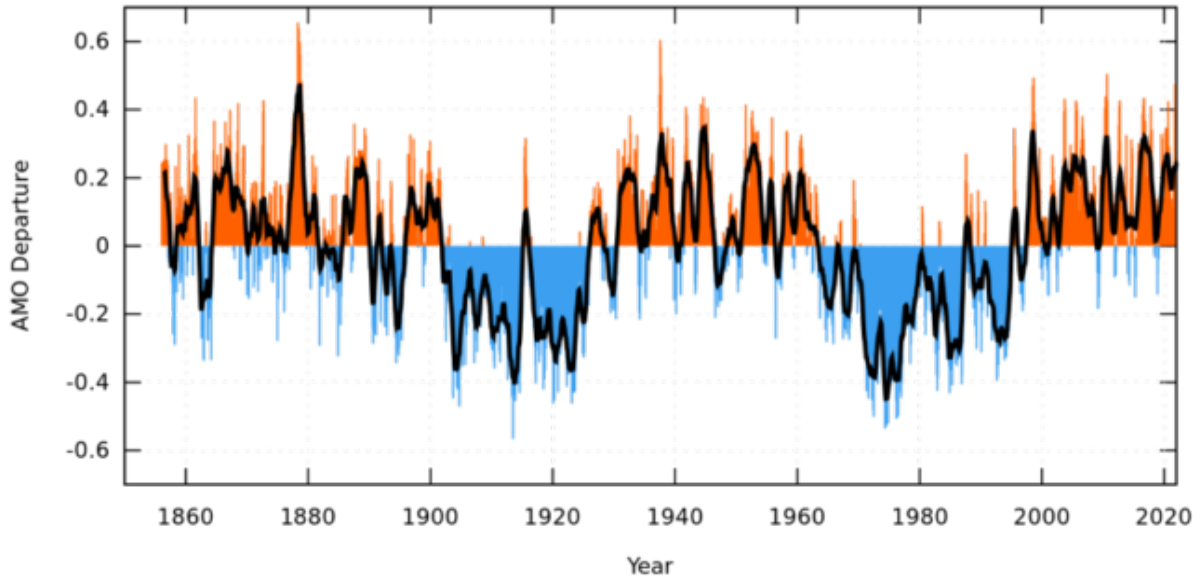
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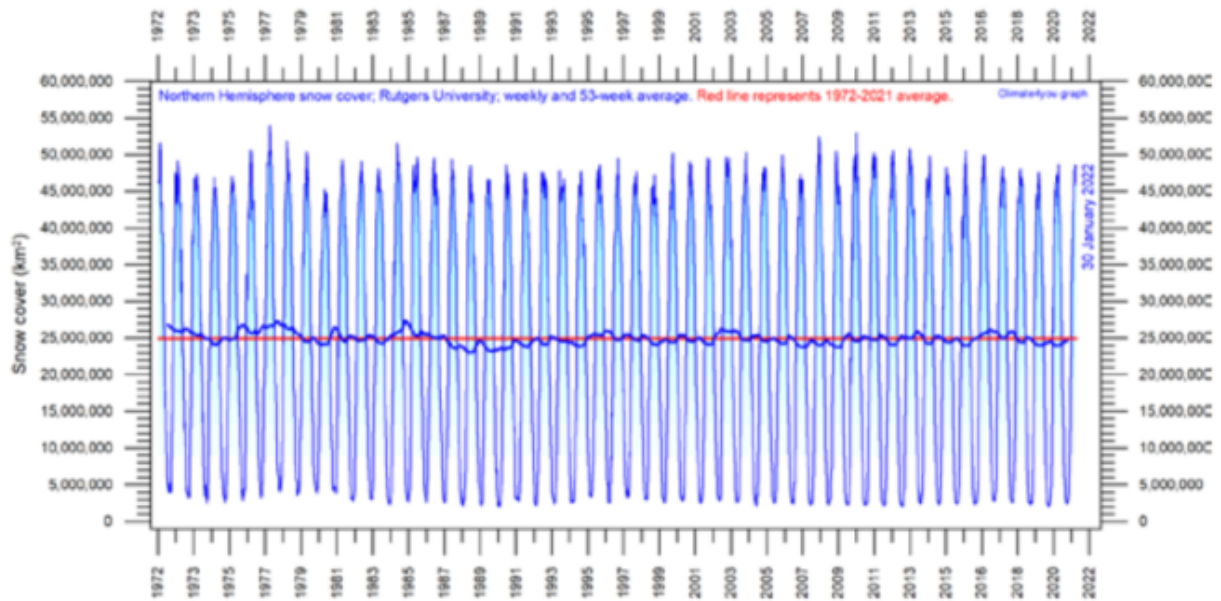
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??1967??2022????56????????????????????AM  
O????????60??AMO????????????

Monthly values for the AMO index, 1856 - 2022



???1972??



**Figure 7:** Northern hemisphere weekly snow cover since January 1972 according to the Rutgers University Global Snow Lab (<http://climate.rutgers.edu/snowcover>), the thin blue line is the weekly data, and the thick blue line is the running 53 week average (approximately 1 year). The horizontal red line is the 1972-2021 average. Last week shown: week 1 in 2022. Last figure update: 11 January 2022. Source: Ole Humlum, climate4you.com

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Posted in ???, ????? | No Comments »

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?? ??? ?? · Thursday, May 11th, 2023



mirza kadic/iStock

“Derzeit ist es für mich noch nicht möglich, den Wahlkampf zu beginnen. Ich habe noch viel zu tun, um die Herausforderungen der nächsten Jahre zu meistern.“

2005 bis 2021 war die CDU die stärkste Partei in Deutschland. 6 Jahre lang wurde Angela Merkel als Bundeskanzlerin regiert.

Die CDU hat sich in den letzten Jahren als führende Kraft bei den Klimaschutzmaßnahmen etabliert. 17 Jahre lang hat die CDU die Bundesregierung geleitet und dabei entscheidend zur Reduzierung der CO2-Emissionen beigetragen.

Die CDU hat sich in den letzten Jahren als führende Kraft bei den Klimaschutzmaßnahmen etabliert.

In 15 Jahren hat die CDU die Bundesregierung geleitet und dabei entscheidend zur Reduzierung der CO2-Emissionen beigetragen. Die CDU hat sich in den letzten Jahren als führende Kraft bei den Klimaschutzmaßnahmen etabliert.

Die CDU hat sich in den letzten Jahren als führende Kraft bei den Klimaschutzmaßnahmen etabliert.

Die CDU hat sich in den letzten Jahren als führende Kraft bei den Klimaschutzmaßnahmen etabliert.

80 Jahre lang ist die CDU die stärkste Partei in Deutschland. 6 Jahre lang wurde Angela Merkel als Bundeskanzlerin regiert.

Die CDU hat sich in den letzten Jahren als führende Kraft bei den Klimaschutzmaßnahmen etabliert.

Die CDU hat sich in den letzten Jahren als führende Kraft bei den Klimaschutzmaßnahmen etabliert. AfD hat sich in den letzten Jahren als führende Kraft bei den Klimaschutzmaßnahmen etabliert.

Die CDU hat sich in den letzten Jahren als führende Kraft bei den Klimaschutzmaßnahmen etabliert.



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Posted in ???, ?? | No Comments »

**RFK Jr.?2024????????????????????**  
?? ?? · Wednesday, May 10th, 2023



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kennedy24.com??

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RFK Jr. Says Climate Change Being Exploited to Push 'Totalitarian Controls'  
(theepochtimes.com)?

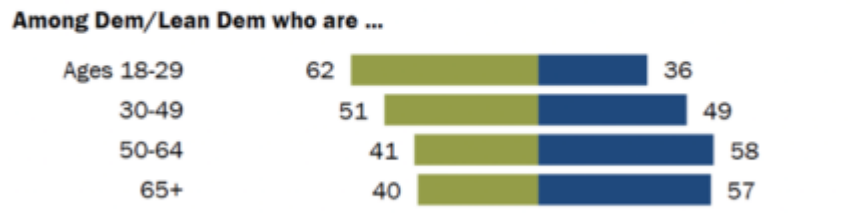
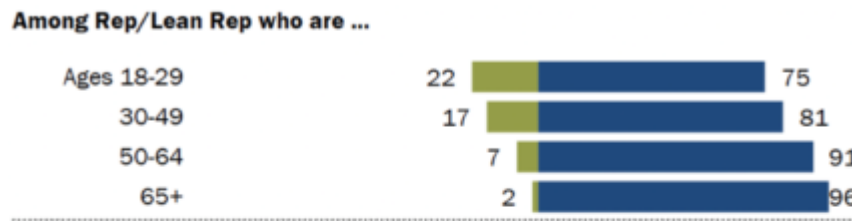
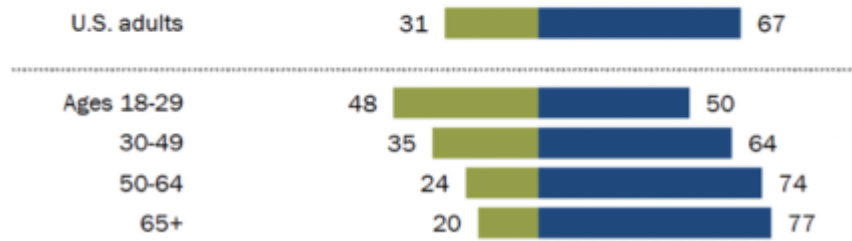
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### Younger U.S. adults more open than older adults to phasing out fossil fuels completely

% of U.S. adults who say that the U.S. should ...

- Phase out the use of oil, coal and natural gas completely, relying instead on renewable sources
- Use a mix of energy sources including oil, coal and natural gas along with renewable sources



Note: Respondents who did not give an answer are not shown.  
Source: Survey conducted Jan. 24-30, 2022.

PEW RESEARCH CENTER

What the data says about Americans' views of climate change? Pew Research Center ?

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Posted in ???, ?? | [No Comments »](#)

**2023??ESG????????**

?? ?? · Saturday, May 6th, 2023



Kanur Ismail/iStock

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2023????????EU????????????????????????????????2035?EV????????????????????????????????ESG???

ESG ESG 19 ESG

2024

CO2

年	日本	米国
1997年	▲6% (橋本政権)	▲7% (クリントン政権)
2015年	▲26% (安倍政権)	▲26% (オバマ政権)
2021年	▲46% (菅政権)	▲50~52% (バイデン政権)

CO2

CO2 CSR

2021 2021 46% 2024 ESG

ESG ESG

CO2

ESG CO2 CO ESG

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SDGs

Posted in ??????????, ??? | No Comments »

# EU?EV????????????????????e-fuel????

?? ?? · Sunday, April 30th, 2023



a-image/iStock

## EU?EV?????

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Development Impact Meetings????????????????????????

UN Secretary for Global Comms says we “own the science” on “climate change,”  
and we think that “the world should know it.”

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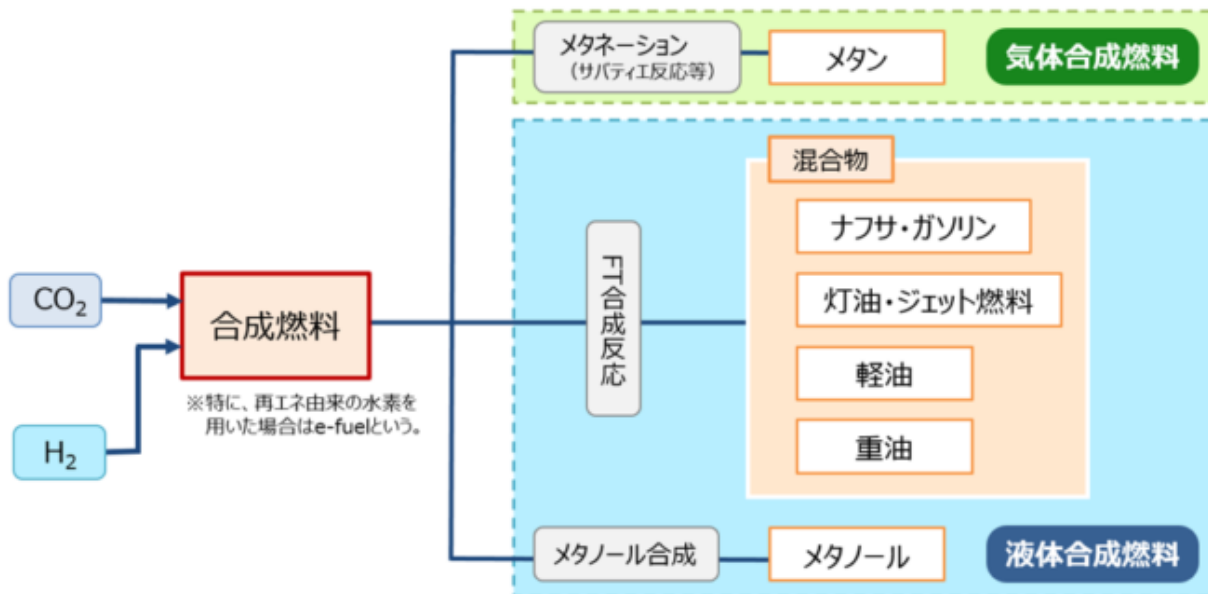
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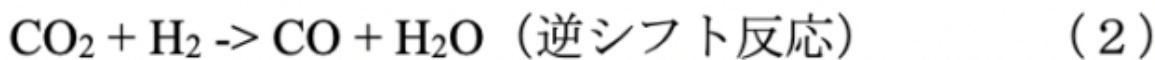
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CO<sub>2</sub>とH<sub>2</sub>から合成燃料を製造する際の反応



2021年現在の状況

現在のCO<sub>2</sub>とH<sub>2</sub>の価格と製造コスト



e-fuelの製造コスト

e-fuelの製造コストのシナリオ

H <sub>2</sub>	CO <sub>2</sub>	製造コスト	合計	注
100円/Nm <sup>3</sup> × 6.34Nm <sup>3</sup> /L	5.91円/kg × 5.47kg/L	33円/L	約700円/L	国内の水素を活用し、国内で合成燃料を製造するケース
(32.9円/Nm <sup>3</sup> + 14.65円/Nm <sup>3</sup> ) × 6.34Nm <sup>3</sup> /L	32円/L	33円/L	約350円/L	海外の水素を国内に輸送し、国内で合成燃料を製造するケース
32.9円/Nm <sup>3</sup> × 6.34Nm <sup>3</sup> /L	32円/L	33円/L	約300円/L	合成燃料を海外で製造するケース
20円/Nm <sup>3</sup> × 6.34Nm <sup>3</sup> /L	32円/L	33円/L	約200円/L	将来、水素価格が20円/Nm <sup>3</sup> になったケース

※NEDO「CO<sub>2</sub>からの液体燃料製造技術に関する開発シーズ発掘のための調査（2020.8）」の結果に基づき試算。

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Posted in ??????????, ??, ?????????? | No Comments »

## G7????????????????????

?? ? · Tuesday, April 25th, 2023

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Posted in ??????????, ??? | [No Comments »](#)

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?? ?? · Monday, April 24th, 2023



nndanko/iStock

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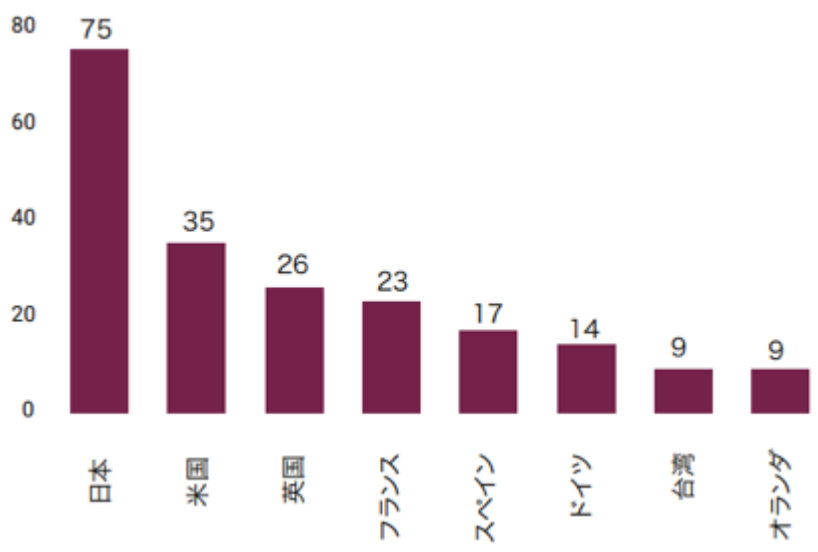
**CDP?????**

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# 気候変動 Aリスト 2022

### Aリスト国・地域別企業数(上位8か国)



1) CDP A 2022  
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2022 6 8 SDGs Google SDGs CDP 1

CDP 4  
 CDP  
 CDP

CDP CO2 CO2 Tier1  
 CDP 100%

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CO2

(a)会社名	(b)調達金額 (円)	(c)各社の売上高 (円)	(d)各社の CO2 排出量 (トン)	(e)=(d) × (b) ÷ (c) (トン)
A社				
B社				
C社				
:				

1 Tier1 CO2

a b Tier1

c d CO2

a d e d × b ÷ c CO2 Tier1

2021 6 2022 3 5

CO2

CDP CDP

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A CO2 1 CO2 100 500 1000

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Posted in ??????????, ??? | No Comments »

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?? ?? · Sunday, April 16th, 2023



deepblue4you/iStock

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# Hydrogen

Friday, April 14th, 2023



Leestat/iStock

2017-2021 Hydrogen production capacity in the EU is expected to reach 15 million tonnes per year by 2021, up from 6 million tonnes in 2017.

Hydrogen production capacity in the EU is expected to reach 15 million tonnes per year by 2021, up from 6 million tonnes in 2017.

2021-2025 Hydrogen production capacity in the EU is expected to reach 15 million tonnes per year by 2025, up from 15 million tonnes in 2021.

Hydrogen production capacity in the EU is expected to reach 15 million tonnes per year by 2025, up from 15 million tonnes in 2021. CO2 emissions from hydrogen production are expected to be 10 million tonnes per year by 2025, up from 10 million tonnes in 2021.

Hydrogen production capacity in the EU is expected to reach 15 million tonnes per year by 2025, up from 15 million tonnes in 2021. CO2 emissions from hydrogen production are expected to be 10 million tonnes per year by 2025, up from 10 million tonnes in 2021.

Hydrogen production capacity in the EU is expected to reach 15 million tonnes per year by 2025, up from 15 million tonnes in 2021.

Hydrogen production capacity in the EU is expected to reach 15 million tonnes per year by 2025, up from 15 million tonnes in 2021. CO2 emissions from hydrogen production are expected to be 10 million tonnes per year by 2025, up from 10 million tonnes in 2021.

Hydrogen production capacity in the EU is expected to reach 15 million tonnes per year by 2025, up from 15 million tonnes in 2021.



CO2 H2O CO2

IT

60 60 2 36 64 40

CO2

km

2017 5 1 138

1 CCUS CO2

1 CCUS

1000

2 EV

CCUS

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Posted in ??????????, ??? | [No Comments »](#)

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?? ?? ? · Wednesday, April 12th, 2023



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Posted in ??????????, ??, ?? | No Comments »

### ????????????????

?? ?? · Sunday, April 9th, 2023



Hello my names is james,I'm photographer./iStock

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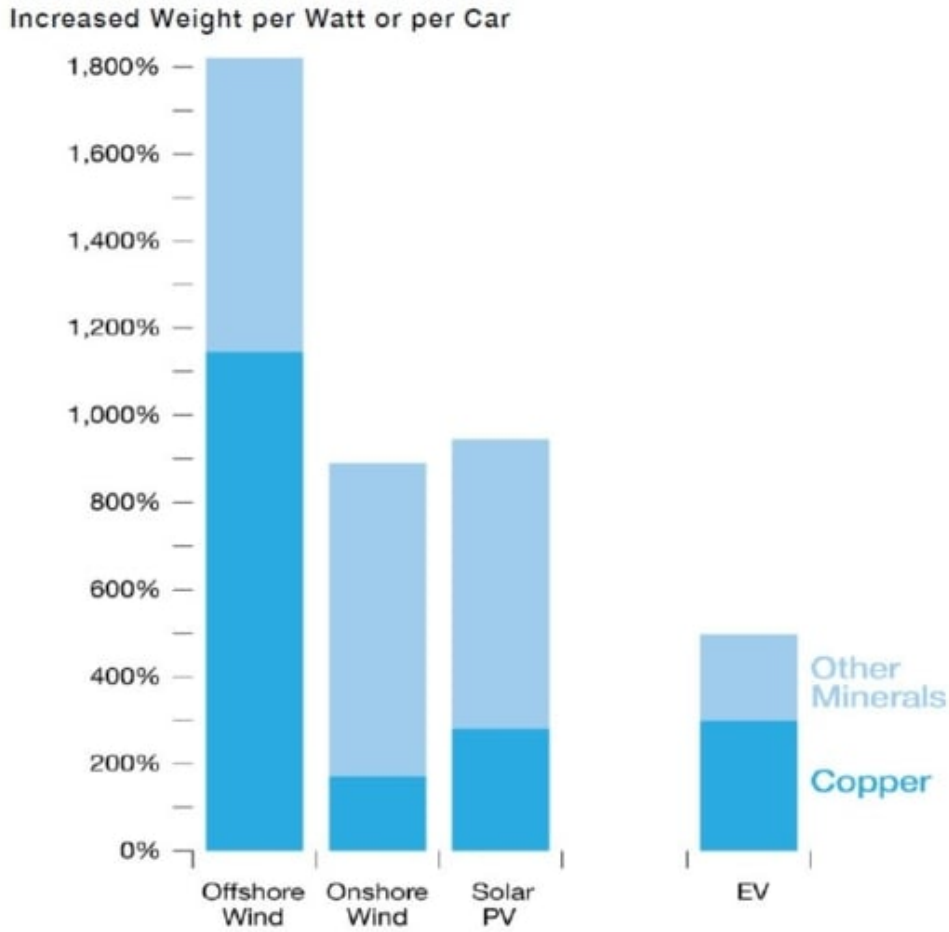
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**Mineral Demands for Solar, Wind, and EV to Replace Hydrocarbon Machines**



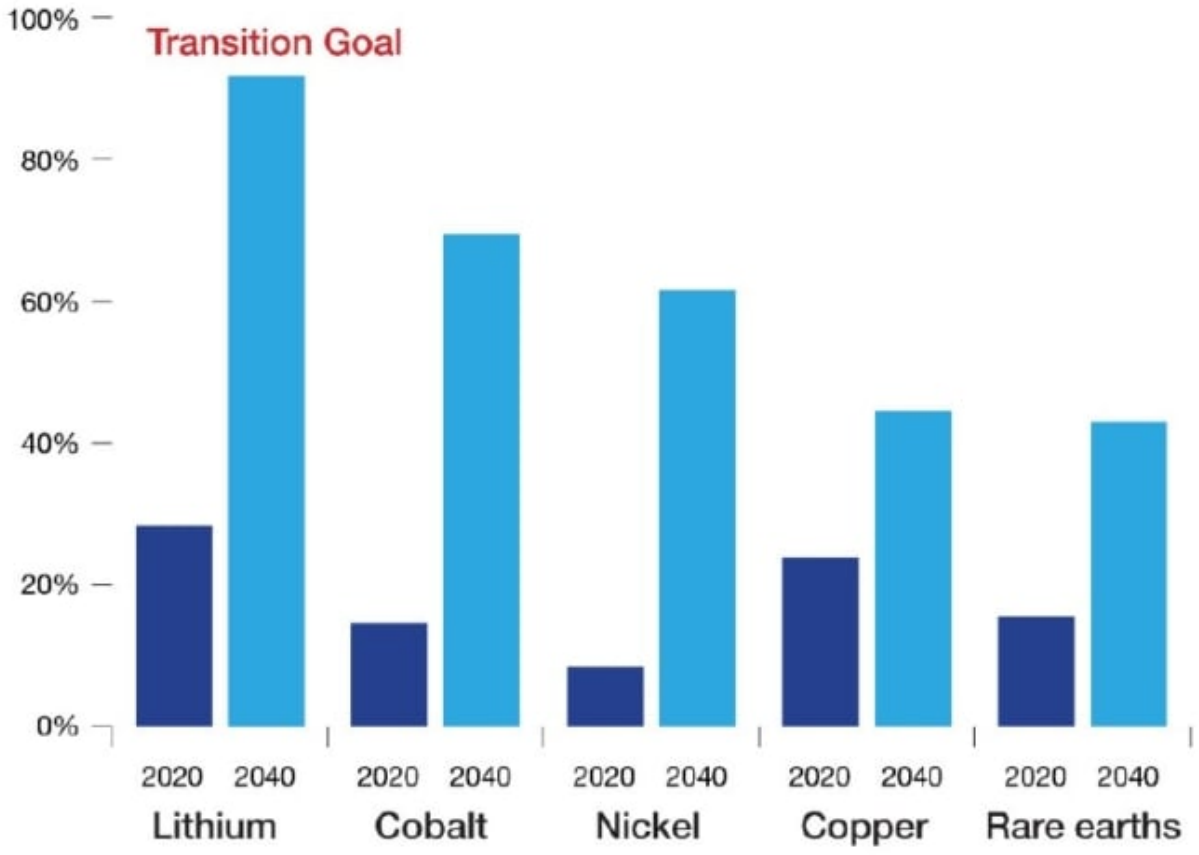
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2. ???

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### Energy Sector Share of Mineral Demands for All Purposes

Share of All Uses



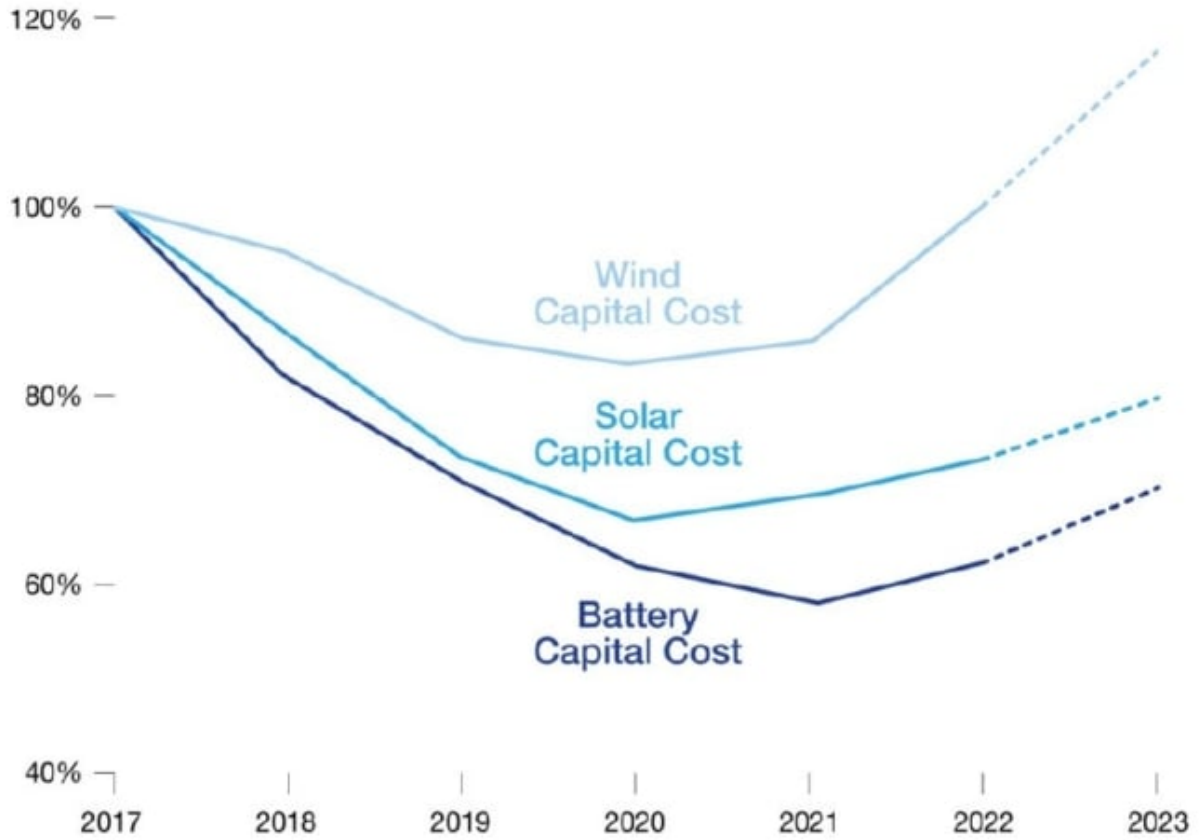
International Energy Agency (IEA) - Net Zero by 2050 Scenario. The transition goal is to reach 100% share of mineral demands by 2040.

International Monetary Fund (IMF) - World Economic Outlook. Projections for 2020 and 2040.

### 3. Key Findings and Recommendations

### Costs of Wind, Solar, and Battery Hardware

Change from 2017



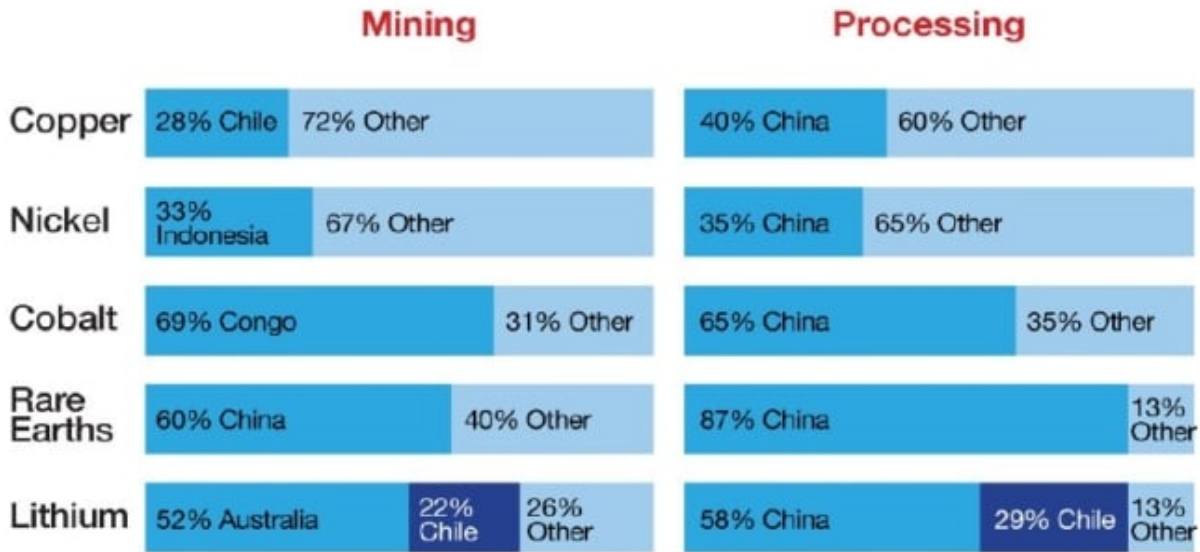
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### Sources of Key Energy Transition Minerals



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?? ?? · Saturday, April 8th, 2023



HiddenCatch/iStock

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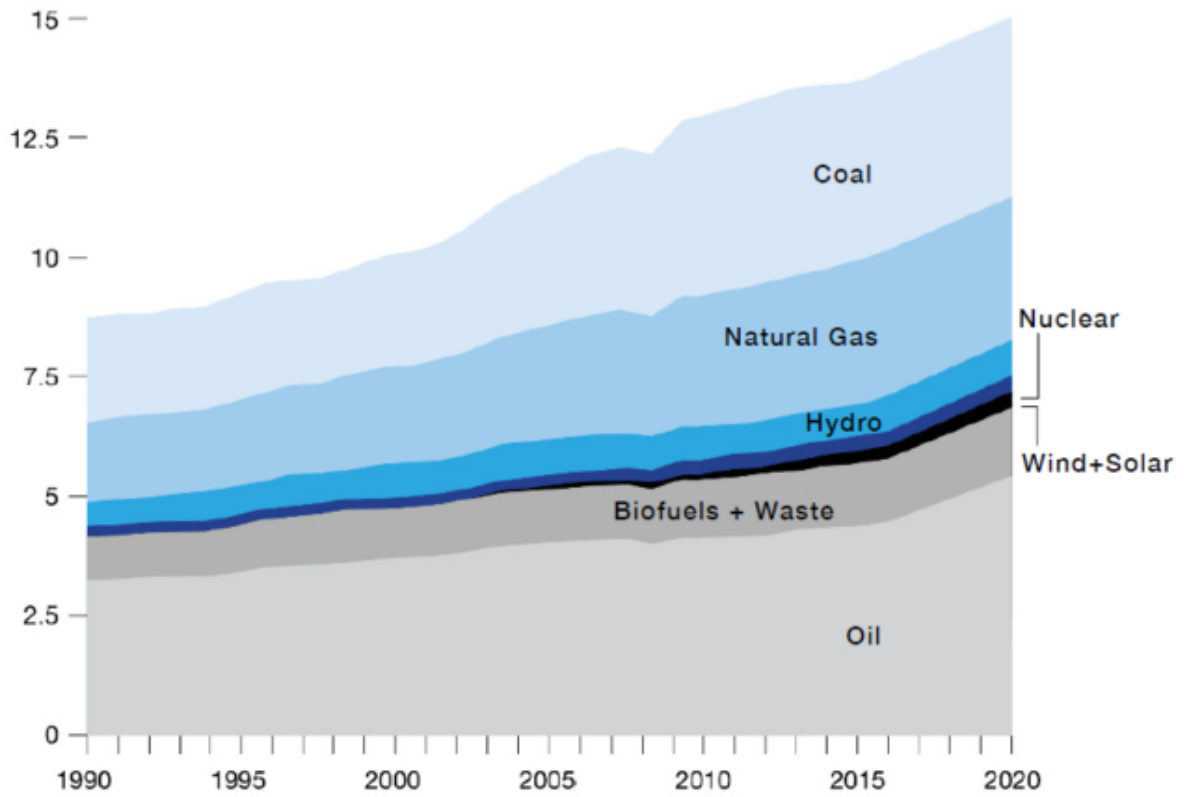
2050??

**1. ?????????????????????**

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## Growth in Global Energy Supplies

Oil Equivalent (Billion Tons/Year)\*



### 2. ???????????????

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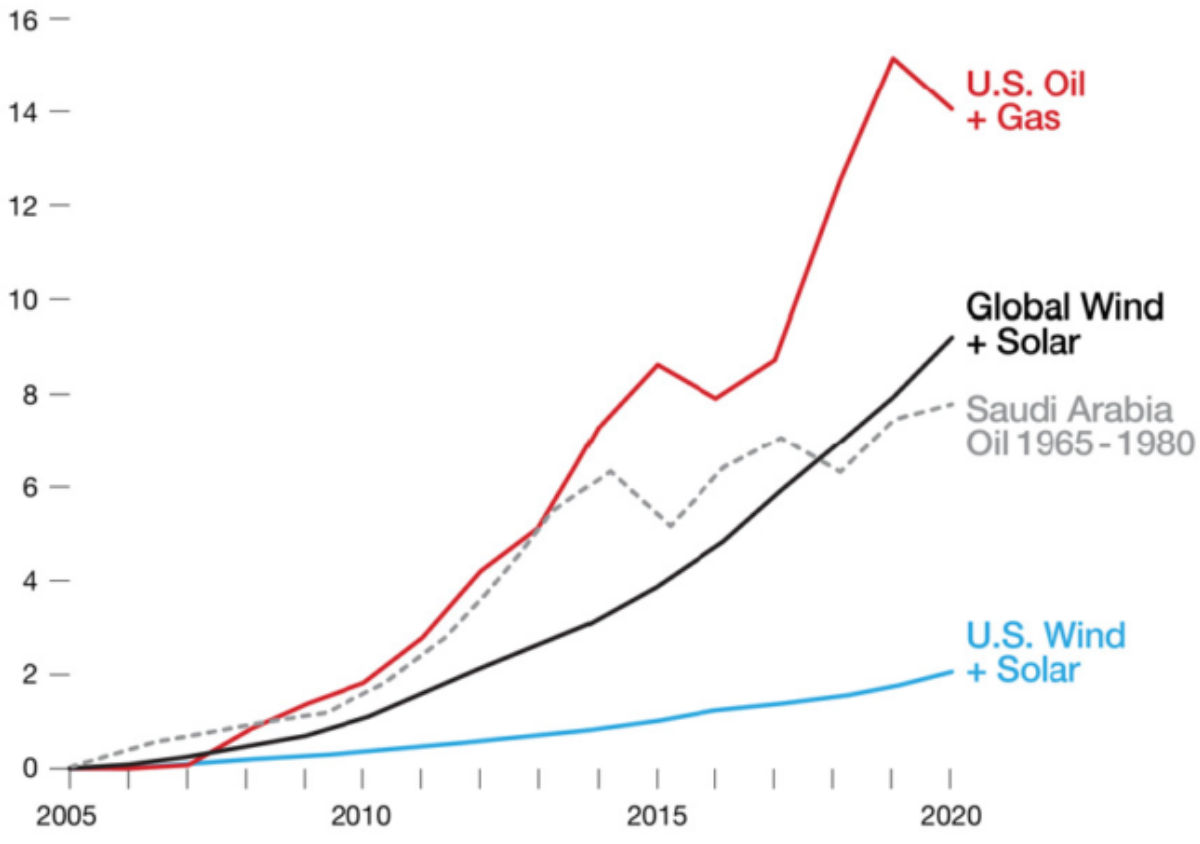


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### Growth of Shale Energy vs. Wind+Solar 2005–20, Compared with Saudi Arabia Oil 1965–80

Increased Production (Million BOE/Day)

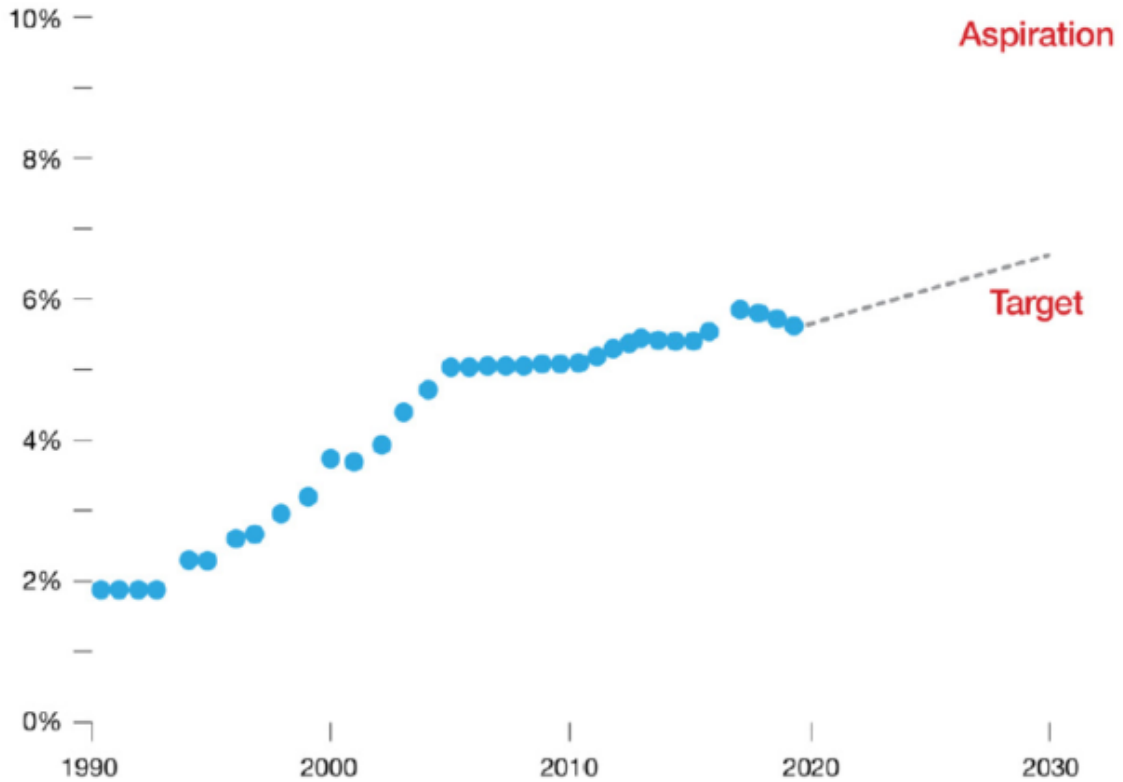


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Battery Energy Density\* (% of Gasoline Density)



\*Note: Density comparison incorporates the doubly superior efficiency of a battery+motor vs. gasoline+engine.

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?? ?? · Thursday, April 6th, 2023

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?? ?? · Wednesday, April 5th, 2023

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